

CLAIM

1. A process for decreasing the amount of environmental pollutants in a mixture comprising a fat or an oil, being edible or for use in cosmetics, the fat or oil containing the environmental pollutants,
characterized in that the process comprises the steps of;
 - adding a volatile working fluid to the mixture, where
10 the volatile working fluid comprises at least one of a fatty acid ester, a fatty acid amide, a free fatty acid and a hydrocarbon, and
 - subjecting the mixture with the added volatile working fluid to at least one stripping processing step, in which
15 an amount of environmental pollutant present in the fat or oil, being edible or for use in cosmetics, is separated from the mixture together with the volatile working fluid.
2. A process according to claim 1, wherein the volatile working fluid is essentially equally or less volatile than the environmental pollutants that are to be separated from the fat or oil mixture.
3. A process according to claim 1, wherein the volatile working fluid is constituted by free fatty acids
25 comprised in the fat or oil, being edible or for use in cosmetics, containing the environmental pollutants.
4. A process according to claim 1, wherein the at least one of a fatty acid ester, a fatty acid amide and a free fatty acid is obtained from at least one of vegetable, microbial and animal fat or oil.
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5. A process according to claim 4, wherein the animal fat or oil is a fish oil and/or an oil obtained from sea mammals.

6. A process according to claim 1, wherein the volatile working fluid comprises at least one fatty acid ester composed of C10-C22 fatty acids and C1-C4 alcohols, or a combination of two or more fatty acid ester each composed of C10-C22 fatty acids and C1-C4 alcohols.

10 7. A process according to claim 1, wherein the fat or oil, being edible or for use in cosmetics, is obtained from at least one of vegetable, microbial and animal fat or oil, or any combination thereof.

15 8. A process according to claim 7, wherein the fat or oil, being edible or for use in cosmetics, is a marine oil.

9. A process according to claim 8, wherein the marine oil is obtained from fish or sea mammals, containing at least saturated and unsaturated fatty acids in the form of triglycerides.

20 10. A process according to claim 7, wherein the fat or oil is a ricinus oil for use in cosmetics or medicinal applications.

11. A process according to claim 7, wherein the fat or oil is a tocopherol concentrate prepared from a condensate from at least one deodorization process of at least one vegetable oil, wherein the tocopherol concentrate containing at least one of PAH and volatile pollutants, or any combination thereof.

30 12. A process according to claim 1, wherein the ratio of (volatile working fluid):(fat or oil, being edible or for use in cosmetics) is about 1:100 to 15:100.

13. A process according to claim 12, wherein the ratio of (volatile working fluid):(fat or oil, being edible or for use in cosmetics) is about 3:100 to 8:100.

14. A process according to claim 1, wherein said 5 stripping processing step is carried out at temperatures in the interval of 120-270 °C.

15. A process according to claim 1, wherein said stripping processing step is carried out at temperatures in the interval of 150-200 °C.

10 16. A process according to claim 1, wherein said stripping processing step is carried out at a pressure below 1 mbar.

17. A process according to claim 1, wherein the at least one stripping processing step is one of a thin-film 15 evaporation process, a molecular distillation or a short-path distillation or any combination thereof.

18. A process according to claim 17, wherein the at least one thin-film evaporation process is carried out at a mixture flow rate in the interval of 10-300 kg/h·m².

20 19. A volatile environmental pollutants decreasing working fluid, for use in decreasing an amount of environmental pollutants present in a fat or oil, being edible or for use in cosmetics, the working fluid comprising at least one of a fatty acid ester, a fatty acid amide, a 25 free fatty acid and a hydrocarbon, or any combination thereof.

20. A volatile environmental pollutants decreasing working fluid according to claim 19, wherein said at least one of a fatty acid ester, a fatty acid amide, a 30 free fatty acid is obtained from at least one of vegetable, microbial and animal origin, or any combination thereof.

21. A volatile fat or oil environmental pollutants decreasing working fluid according to claim 20, wherein the animal origin is fish or sea mammals.

22. Use of a volatile environmental decreasing working fluid according to claim 19, in a process for decreasing an amount of environmental pollutants, such as toxic component, in a mixture comprising a fat or oil, being edible or for use in cosmetics, preferably a marine oil, containing the toxic components, in which process the volatile working fluid is added to the mixture and then the mixture is subjected to at least one stripping processing step, preferably a thin-film evaporation process, a molecular distillation or a short-path distillation, or any combination thereof, and in which process an amount of toxic components present in the fat or oil, being edible or for use in cosmetics, is separated from the mixture together with the volatile working fluid.

23. A volatile environmental pollutants decreasing working fluid, wherein the volatile working fluid is a by-product, such as a distillate fraction, from a regular process for production of ethyl and/or methyl ester concentrates.

24. A health supplement, containing at least a marine oil, which marine oil is prepared according to the process presented in claim 1, in order to decrease the amount of environmental pollutants in the marine oil.

25. A pharmaceutical, containing at least a fish oil, which fish oil is prepared according to the process presented in claim 1, in order to decrease the amount of environmental pollutants in the fish oil.

26. An animal feed product, containing at least a marine oil, which marine oil is prepared according to the

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process presented in claim 1, in order to decrease the amount of environmental pollutants respectively the amount of free fatty acids in the marine oil.

27. An animal feed product according to claim 26,
5 wherein the feed product is a fish feed product.

28. A cosmetic product, based on ricinus oil, which ricinus oil is prepared according to the process presented in claim 1, in order to decrease the amount of environmental pollutants in the ricinus oil.

10 29. A marine oil product, prepared according to the process presented in claim 1.

30. A marine oil product according to claim 29, wherein the marine oil product is a fish oil product or a fish oil composition.

15 31. A tocopherol concentrate product, based on a tocopherol concentrate prepared from a condensate from a deodorization process of at least one vegetable fat or oil, such as palm oil or soy oil, which concentrate containing at least one of PAH and volatile pollutants and
20 is prepared according to the process presented in claim 1, in order to decrease the amount of PAH and volatile pollutants in the tocopherol concentrate.